

1. A method of enhancing production from a hydrocarbons-producing interval in a subterranean formation penetrated by a well bore, comprising the steps of:

(a) placing an electrical submersible pump attached to and in fluid communication with the bottom end of a string of pipe joints or tubing in said well bore below said interval;

(b) flowing a liquid comprising crude oil or water from the surface through a further string of pipe joints or tubing in said well bore to below the interval, whereupon the liquid exits this string and combines with a liquid comprised of oil, water or both from the interval; and

(c) pumping the combined liquids to the surface through the string having said electrical submersible pump attached thereto and in fluid communication therewith at its bottom end.

2. The method of claim 1, wherein the hydrocarbons produced include a high viscosity crude oil component, and the liquid supplied from the surface comprises a less viscous crude oil.

3. The method of claim 1, wherein the liquid supplied from the surface is heated to reduce paraffin buildup in the well bore.

4. The method of claim 1, wherein chemical treatment additives are incorporated in the liquid supplied from the surface for inhibiting one or more of corrosion, scale or gas hydrate formation.

5. A method of producing a low pressure water-containing gas interval in a subterranean formation penetrated by a well bore whereby production-limiting water level build-up or loss of water level in the well bore does not occur, comprising the steps of:

(a) placing an electrical submersible pump attached to and in fluid communication with the bottom end of a string of pipe joints or tubing in said well bore below said water-containing gas interval, said string of pipe joints or tubing extending to the surface whereby water pumped by said electrical submersible pump is conducted to a storage or disposal location;

(b) placing a further string of pipe joints or tubing in said well bore having one or more openings therein at the bottom end thereof, the bottom end of said string of tubing extending below said water-containing gas interval; and

(c) flowing water from the surface through said further string of pipe joints or tubing so that said water exits said string of pipe joints or tubing and is pumped by said electrical submersible pump along with water from said water-containing gas interval to the surface at a rate sufficient to prevent pump overheating due to a lack of water and to prevent water build-up in said well bore that reduces or prevents gas production from said water-containing gas interval.

6. The method of claim 5 wherein the flow rate of said water supplied from the surface is controlled so that water is pumped from the well bore by said electrical submersible pump at a rate whereby the water level in said well bore is kept below said water-containing gas interval.

7. The method of claim 5 wherein the flow rate of said water supplied from the surface is controlled at the surface based on the flow rate of water pumped from the well bore to the surface.

8. Apparatus for enhancing production from a hydrocarbon producing interval in a subterranean formation penetrated by a well bore, comprising:

an electrical submersible pump attached to and in fluid communication with the bottom end of a string of pipe joints or tubing extending in said well bore from the surface to below said hydrocarbon producing interval;

a further string of pipe joints or tubing having one or more openings therein at the bottom end thereof extending in said well bore from the surface to below said hydrocarbon containing interval; and

means associated with said strings of pipe joints or tubing at the surface for supplying and controlling a flow of a liquid comprising crude oil or water from the surface to below said hydrocarbon producing interval.

9. Apparatus for producing a low pressure water-containing gas interval in a subterranean formation penetrated by a well bore comprising:

an electrical submersible pump attached to and in fluid communication with the bottom end of a string of pipe joints or tubing extending in said well bore from the surface to below said water-containing gas interval;

a further string of pipe joints or tubing having one or more openings therein at the bottom end thereof extending in said well bore from the surface to below said water-containing gas interval; and

means associated with said strings of pipe joints or tubing at the surface for supplying and controlling a flow of water from the surface to below said water-containing gas interval.

10. The apparatus of claim 9 wherein said well bore contains casing therein.

11. The apparatus of claim 9 wherein said well bore is perforated in said water-containing gas interval.

12. The apparatus of claim 9 wherein the string of pipe joints or tubing receiving water from the electrical submersible pump and returning the water to the surface is positioned inside the further string of pipe joints or tubing and defines a space therewith through which water supplied from the surface can flow and exit through the one or more openings in the further string of pipe joints or tubing.

13. The apparatus of claim 9 wherein the strings of pipe joints or tubing are positioned adjacent one another.

14. The apparatus of claim 9 wherein said means associated with said strings of pipe joints or tubing at the surface for supplying and controlling a flow of water from the surface into the well bore comprises a manually or automatically controlled valve connected to the string of pipe joints or tubing through which the water is supplied and a flow meter or an automatic valve flow controller or both connected to said string of pipe joints or tubing.